

IOWA DEPARTMENT OF ADMINISTRATIVE SERVICES ▼
HUMAN RESOURCES ENTERPRISE

TRANSPORTATION ENGINEER INTERN

DEFINITION

Performs progressively responsible introductory engineering work assignments to qualify to sit for a Professional Engineer examination; temporary training assignments will terminate within six months following a second attempt to obtain a professional engineer license or nine years from date of hire; performs related work as required.

The Work Examples and Competencies listed are for illustrative purposes only and not intended to be the primary basis for position classification decisions.

WORK EXAMPLES

Learns established technical engineering procedures, practices, standards and methods related to ongoing operations and develops professional work knowledge and abilities to conduct learned duties independently.

Monitors and inspects construction projects to ensure adherence to plans, guidelines and specifications; samples and tests materials and work for quality; verifies payments to contractor; plans project schedules, assesses project requirements in terms of equipment, staffing, and training of technicians; makes budget calculations.

Assists a registered engineer in applied engineering research and design projects; provides technical direction and assistance in a transportation engineering or planning research program.

Determines alternatives to be studied in the corridor phase of a highway location project; considers relative engineering details and schedules field reviews; prepares preliminary concept plans and cost estimates for each alternative.

Develops preliminary bridge and culvert plans; performs hydrologic and hydraulic design and analysis of less complex highway structures; reviews preliminary and hydraulic designs by contractors to ensure state and federal guidelines and specifications are met.

Conducts geotechnical investigations, analyses and makes recommendations for bridges and culverts, fill embankments and cuts, and other stability features; performs engineering analysis of pile driving systems and provides wave equation analysis and computer support for construction residencies.

Performs pavement condition testing and other materials testing updates and analyzes data obtained for use in the Iowa Pavement Management Information System.

Analyzes the existing condition of the state highway system and highway investment alternative necessary to the conduct of major planning studies such as needs, sufficiency and the highway investment plan.

COMPETENCIES REQUIRED

Knowledge of basic technical transportation engineering principles, practices, techniques and equipment related to the planning, design, maintenance and construction of highway facilities or transportation programs.

Ability to identify specific information from a substantial amount of related data or written information in such sources as legal property descriptions, technical reports, survey notes, manuals and standard specifications.

Ability to read and understand the terminology and symbols used in survey notes, plans, aerial photographs and topographic maps to interpret data and information for use in designing highway projects.

Ability to follow written and oral instructions to complete work as assigned.

Ability to interpret a variety of tests and information to determine the quality of construction methods, design materials and workmanship.

Ability to express ideas effectively, both orally and in writing, in the English language to interact with departmental staff, contractor personnel, federal officials, or the public in explaining project/study provisions.

Ability to accurately perform algebraic, geometric, trigonometric, and other mathematical calculations.

Ability to visualize and illustrate a concept or design in one, two or three dimensions.

Ability to keep own emotions under control and restrain negative behaviors when provoked or when working under conditions of stress.

Displays high standards of ethical conduct. Exhibits honesty and integrity. Refrains from theft-related, dishonest or unethical behavior.

Works and communicates with internal and external clients and customers to meet their needs in a polite, courteous, and cooperative manner. Committed to quality service.

Displays a high level of initiative, effort and commitment towards completing assignments efficiently. Works with minimal supervision. Demonstrates responsible behavior and attention to detail.

Responds appropriately to supervision. Follows policy and cooperates with supervisors.

Aligns behavior with the needs, priorities and goals of the organization.

Encourages and facilitates cooperation, pride, trust, and group identity. Fosters commitment and team spirit.

Expresses information to individuals or groups effectively, taking into account the audience and nature of the information. Listens to others and responds appropriately.

EDUCATION, EXPERIENCE, AND SPECIAL REQUIREMENTS

Graduation from an accredited four year college or university or possession of a Verification of Graduation with major course work in chemical, civil, construction, environmental, materials, mechanics, structural or transportation engineering, or in engineering management.

NOTE:

Hires made with the Verification of Graduation will require graduation from the college or university within 10 months of hire.

NECESSARY SPECIAL REQUIREMENTS

Possession of an Engineer certificate issued by the Iowa State Board of Engineering Examiners is required within 18 months of hire. Licensure as a professional engineer is required within 9 years of hire for continued employment as a Transportation Engineer Intern.

SELECTIVE CERTIFICATION

For designated positions, the appointing authority, with Iowa Department of Administrative Services – Human Resources Enterprise prior approval, may request those applicants possessing a minimum of twelve semester hours of education, six months of experience, or a combination of both, or a specific certificate, license, or endorsement in the following areas:

093	chemical engineering
705	traffic engineering
709	transportation planning

Applicants wishing to be considered for such designated positions must list applicable course work, experience, certificate, license, or endorsement on the application.

Effective Date: 4/07 DK